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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,279	10/17/2001	Stephen L. Kuffner	CM01969G	7804
22917	7590	11/28/2005	EXAMINER	
MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			ZHENG, EVA Y	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/982,279	Applicant(s) KUFFNER ET AL.	
	Examiner Eva Yi Zheng	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/26/02 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/14/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 9/14/05 have been fully considered but they are not persuasive. Examiner has thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meet the claimed limitation as rejected.

Applicant's argument – a) claims has been amended to be directed to a method using *multiple transmission passes*. b) none of the prior art discloses that any two or more of the multiple user signals are received on the same code channel.

Examiner's response – a) *transmission passes* are interpret as transmission channels. Laakso et al. disclose canceling multiple access interference from a plurality of subscriber terminal equipments 11-14 in Fig. 1 to at least one base station 10. As shown in Fig. 1 each of the subscriber terminal equipments corresponding to a transmission passes. Therefore, signals are transmitted from multiple transmission passes to the base station. b) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *two or more of the multiple user signals are received on the same code channel*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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2. Applicant's arguments with respect to claims 19 and 20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

3. Claims 1, 5, 10, and 16 are objected to because of the following informalities:

- a) Regarding claim 1, line 5-7, the relationship among "a set of code channels", "first source device", and "one subsequent transmission pass" is unclear and confusing.
- b) Regarding claim 1, line 8-11, signal from where is removed is unclear and confusing. A first source device in connection with a first code channel, but remove signal from the first source device over the second code channel is very confusing.
- c) Regarding claim 5, it is unclear and confusing because signal from the first source device is stored in the first source device.
- d) Regarding claims 10 and 16, render the same confusion as claim 1.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 10, recitation: "estimating a signal" is confusing and unclear due to lack of estimating of what aspect of a signal.

6. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 19 and 20, recitation: "absolute value of the signal" is unclear. Is it the amplitude of the signal, PN code or something else?

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Anderson (US 6,782,264).

a) Regarding claim 19, Anderson discloses receiving a method comprising the steps of:

receiving a signal over a code channel (Fig.1);

estimating a variance of an absolute value of the signal (absolute value of signal interpret as the signal compared with noise; Col 62, L17-25); and

based on the step of estimating, determining that a collision between at least two source device transmissions has occurred on the code channel when the estimated variance exceeds a predetermined threshold (Col 61, L64 - Col 62, L25).

b) Regarding claim 20, Anderson discloses the method of claim 19 wherein the predetermined threshold is derived from a mean of the absolute values of the signal (interpret as a probability value, which is the signal compared with noise; Col 62, L17-49).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2, 4-8, 10-13, and 15 -18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laakso et al (US 5,898,740).

a) Regarding claim 1, Laakso et al disclose a collision mitigation method (inherent as multiple access interference) used in a communication system, the method comprising the steps of:

in a given transmission pass (interpret as transmission between subscriber terminal equipments and base station; Fig. 1), estimating a signal from a first source device that has been received over a first code channel (CDMA) (23 in Fig. 2; Fig. 3);

determining, based on a code channel selection method that uses predetermined information (match filter in Fig. 3), a set of code channels that the signal from the first source device will be received over in at least one subsequent transmission pass (as shown in Fig. 3).

Laakso et al disclose all the subject matters described above except for the specific teaching of removing the signal from the first source device. However, Laakso et al's invention is direct to canceling co-channel interference (Col 4, L49-Col 5, L41), whether the interference signal is removed from the first source device or other source device present no new or unexpected result, so long as the signal collision has been successfully eliminated. Therefore, it is obvious to one of ordinary skill in art to realize that to have signal removed from the first source device would have been a matter of design choice.

- b) Regarding claims 10 and 16, rejections been made under similar reasons as claim 1.
- c) Regarding claim 2, Laakso et al disclose the method of claim 1, wherein the step of estimating comprises estimating a received signal strength of the signal from the first source device (as shown in Fig. 1 and Fig. 3).
- d) Regarding claim 4, Laakso et al disclose the method of claim 1 wherein the steps of claim 1 are repeatedly performed until all signals are determined (Col 5, L33-34).
- e) Regarding claim 5, Laakso et al disclose the method of claim 1 wherein the signal from the first source device represents at least a portion of predetermined data stored on the first source device (as shown in Fig. 3).

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- f) Regarding claim 6, Laakso et al disclose the method of claim 1 wherein the first code channel and the second code channel are the same (Col 3, L19-20).
- g) Regarding claim 7, Laakso et al disclose the method of claim 1 wherein the first code channel and the second code channel are the different (Col 3, L31-32).
- h) Regarding claim 8, Laakso et al disclose the method of claim 1 wherein the first code channel is orthogonal to the second code channel (Col 1, L47-49).
- i) Regarding claim 11, Laakso et al disclose the method of claim 10 wherein the signal from the first source device is removed from at least one of a prior transmission pass and a subsequent transmission pass (Col 4, L49-56).
- j) Regarding claims 12, Laakso et al disclose the method of claim 10 further comprising the step of storing all signals received over their respective code channels in each transmission pass (as shown in Fig. 3).
- k) Regarding claim 13, Laakso et al disclose the method of claim 10 wherein in each transmission pass, a plurality of source devices transmit their respective signals over their selected code channels to a common destination device (as shown in Fig. 1).
- l) Regarding claim 15, Laakso et al disclose the method of claim 10 wherein the steps of claim 10 are repeatedly performed until all signals are determined (Col 5, L33-34).
- m) Regarding claim 17, Laakso et al disclose the method of claim 16 wherein the steps of claim 16 are repeatedly performed until a number of known source devices is equal to the estimated total number of source devices (Col 5, L33-35).



n) Regarding claim 18, Laakso et al disclose the method of claim 16 wherein the steps of claim 16 are repeatedly performed until a predetermined confidence level is obtained (Col 4, L37- Col 5, L41).

11. Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laakso et al (US 5,898,740) in view of Reichman et al. (US 6,535,716).

Regarding claims 3 and 14, Laakso et al disclose all the subject matters described above except for the specific teaching of utilize error correction coding.

However, Reichman et al., in the same field of endeavor, disclose a communication system utilize pseudo noise sequence in combination of error correction code in order to avoid channel collision (Col 7, L47-60). Laakso et al's system is particular use in CDMA communication system. Therefore, it is obvious to one of ordinary skill in art to combine error correction coding with PN code in the CDMA communication system of Laakso et al. By doing, overcome collision in channels and provide better signal transmission probability.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laakso et al (US 5,898,740) in view of Hunzinger (Pub. No.: US 2002/0058528).

Regarding claim 9, Laakso et al disclose all the subject matters described above except for the specific teaching of the first code channel is quasi-orthogonal to the second code channel.

However, Hunzinger, in the field same of endeavor, teaches simultaneous detecting multiples connections in a communication system, and in code division multiple access (CDMA), given a space of frequency and time, channels are defined by codes such as quasi-orthogonal functions such that the channels have minimal interference with one another even though they may be transmitted in the same frequency band and during the same time ([0014]).

Therefore, it is obvious to one of ordinary skill in art to use quasi-orthogonal function between first and second code channels in the CDMA system of Laakso et al. By doing so, minimize channel collision and interference.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Y Zheng whose telephone number is 571-272-3049. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eva Yi Zheng  
Examiner  
Art Unit 2634

November 23, 2005



**SHUWANG LIU**  
**PRIMARY EXAMINER**